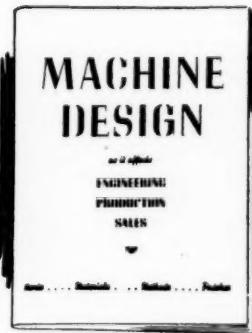


MACHINE DESIGN

Index to Volume 8

January to December, 1936



Penton Bldg. Cleveland

Engin
7/2/53

In the compilation of this Annual Index every effort has been made to direct the reader of MACHINE DESIGN to the article or pages for which he is looking. Many of the articles covered in the "General Contents" section of the index are cross-referenced, and some are listed four or five times under different headings

THE "Itemized Index" commencing page 12, follows the style and listings given in each issue of the journal. It is, however, broken down in the major groupings to simplify its use. Advertising pages as well as editorial pages are listed under the parts, materials, finishes, etc., for which advertising has been carried, thus giving the reader a complete reference to the total contents of the magazine throughout the year

MACHINE DESIGN

General Contents Index

January to December, 1936

For Itemized Index, See Page 12

A

Alloys:

See under Materials.

Aircraft:

Advancements in, Sept., p.20.
Guiding of, June, p.20.
Propeller pitch, regulation of, Oct., p.41.
Welding, advantages of, for, Oct., p.74.

American Gear Manufacturers' association:

Dynamic load, figuring of, July, p.39.

American Standards association:

Preferred number system, Aug., p.18.

Appearance:

See under Style in Design.

Automobiles:

Air springs for, discussion of, March, p.20.
Advancements in, Nov., p.27.
Carburetor, development for, Nov., p.20.
Future trend, predictions on, Feb., p.38.
Gas-electric truck, description of, Nov., p.33.
Gauge, gasoline, description of, Dec., p.28.
Safety, building for, June, p.20.
Shock absorbers, developments in, March, p.21.
Welding for fabrication of, Oct., p.50.

B

Bases:

See also under Parts (Itemized Index).
Adjustable type, announcement of, March, p.100.
Motor, resilient, announcement of, Aug., p.56.
Saw trimmer, use of, for, May, p.41.
Vibration dampening, announcement of, Feb., p.64.

Bearings:

See also under Parts (Itemized Index).
Ball,
closures for, announcement of, Oct., p.96.
double-sealed type, announcement of, May, p.70.
grease shield type, announcement of, April, p.68.
grip-lock type, announcement of, July, p.60.

radial and angular contact types, announcement of, Jan., p.68.

Clearance, effect from pressure fits, June, p.43.

Duplex, for grinding applications, announcement of, Dec., p.65.

Faces of, protecting, Jan., p.24.

Friction losses, calculation of, April, p.81.

Gears, use of, with, June, p.38.

Load ratings, comparison of, July, p.36.

Lubrication of, June, p.51.

Materials for, discussion of, March, p.18.

Needle, cam followers, use of, in, Feb., p.25.

Pillow blocks, announcement of, May, p.77.

Plain type,

designing, March, p.79; Jan., p.45.

wrist pins, use of, for, April, p.58.

Plastics, use of, for, Sept., p.34.

Pumps, use of, in, May, p.82.

Roller,

industrial type, announcement of, Oct., p.98.

grease pack type, announcement of, Aug., p.56.

Rubber, use of, for, Sept., p.25.

Shims, use of, for adjusting, Nov., p.35.

Sleeve type, design of, April, p.37.

Telescope mounting, use for, Dec., p.37.

Temperature indicator for, May, p.66.

Belting:

See also Drives under Parts (Itemized Index).

Compensated belts, announcement of, Dec., p.71.

Conveyor, protective measure, Sept., p.23.

Cover for, description of, Aug., p.27.

V-belts,

abrasive machinery, use for, April, p.26.

couplings for, announcement of, Sept., p.71.

fan drive, use of, for, Feb., p.24.

improvements in, announcement of, Jan., p.75.

Vibration, eliminating with, July, p.54.

Biographical Sketches:

Barnum, Dana D., Feb., p.47.

Bausch, Edward, May, p.51.

Birnie, Col. Rogers, Jan., p.50.

Bucknam, Worthy C., Jan., p.50.

Bush, Dr. Vannevar, April, p.52.

Cole, Roy E., April, p.52.

Diederichs, Prof. Herman, June, p.52.

Doherty, Prof. Robert E., May, p.51.

Dudley, Samuel W., July, p.46.

Einstein, Sol, Sept., p.48.

Farmer, Frank M., Dec., p.50.

Fechheimer, Carl J., Dec., p.50.
Floyd, John M., Oct., p.78.
Frey, Muir L., March, p.80.
Furrer, Rudolph, Sept., p.48.
Gibson, Alfred E., Nov., p.55.
Hodgkinson, Francis, Aug., p.48.
Hubbard, Guy, June, p.52.
Jacobus, David S., Dec., p.50.
Kauffmann, Alfred, June, p.52.
Kinkead, Robert E., March, p.80.
Larson, Prof. G. L., April, p.52.
Littlewood, William, Nov., p.55.
Macklin, Justin W., Oct., p.78.
MacLeod, Norman D., Jan., p.50.
Main, Charles T., Feb., p.47.
Mikina, Stanley J., March, p.80.
Miller, Harry A., Nov., p.55.
Sawtelle, E. S., July, p.46.
Smith, M. W., July, p.46.
Spackman, G. Donald, Oct., p.78.
Stevens, W. C., Sept., p.48.
Teeter, Ralph R., Feb., p.47.
Wile, D. D., Aug., p.48.
Kerr, H. H., Aug., p.48.
Williams, Clyde E., May, p.51.

Books:

"Chemistry of Synthetic Resins," by Carleton Ellis, Dec., p.63.
"Control of Electric Motors," by Paisly B. Harwood, Dec., p.63.
"Die Castings," by Charles O. Herb, Dec., p.62.
"Diesel Engineering Handbook," Edited by L. H. Morrison, Jan., p.56.
"Diesel Engines," by H. L. Morrison, May, p.58.
"Elements of Diesel Engineering," by Orville Adams, May, p.56.
"Elements of Motor Vehicle Design," by C. T. B. Donkin, May, p.60.
"Engineering Alloys—Names, Properties and Uses," by N. E. Woldman and A. J. Dornblatt, Dec., p.64.
"Finishing Metal Products," by Herbert R. Simonds, April, p.44.
"Gates and Risers for Castings," by Pat Dwyer, May, p.60.
"Graphical Solutions," by Charles O. Mackey, May, p.56.
"Materials of Engineering," by Prof. H. F. Moore, May, p.58.
"Metallurgical Dialogue," by Dr. Albert Sauveur, May, p.58.
"Practical Descriptive Geometry," by W. G. Smith, May, p.60.
"Procedure Handbook of Arc Welding Design and Practice," Dec., p.62.
"Resistance of Materials," by Prof. Fred B. Seely, May, p.56.
"Symposium on Welding of Iron and Steel," Jan., p.33.

Brakes:

See under Parts (Itemized Index)
Magnetic type, announcement of, May, p.73.
Two-shoe type, announcement of, Oct., p.97.

Business:

Announcements, Jan., p.81; Feb., p.80; March, p.117; April, p.85; May, p.89; June, p.88; July, p.78; Aug., p.78; Sept., p.82; Oct., p.114; Nov., p.94; Dec., p.80.
How Is?, Jan., p.48 Feb., p.58.

C

Cables:

See also under Parts (Itemized Index).
Adjusting angles, device for, Dec., p.71.
Couples for, announcement of, June, p.62.
Quick connection type, announcement of, Sept., p.71.

Cameras:

Testing, use of, in, April, p.29; May, p.30.

Cams:

See also under Mechanisms (Itemized Index).

Adjustable lobe type, description of, Jan., p.45.
Charts, design of, by, May, p.43.
Design of, Aug., p.36.
Followers for, needle bearing type, Feb., p.25.
Parabolic type, design of, Feb., p.39.
Wrapping machines, design of, for, May, p.25.

Castings:

Cast iron, definition of, Aug., p.18.
Centrifugal type, developments in, June, p.29; March, p.17.
Die castings,
 developments in, March, p.34.
 plastics, combining with, March, p.20.
 waste disposal machine, employment of, in, March, p.19.
Strengthening, ribs, use of, for, Sept., p.29.
Welded parts, combining with, May, p.37; July, p.35.

Chains:

See Drives, also Drives under Parts (Itemized Index).

Clutches:

See also under Parts (Itemized Index).
Design of, Aug., p.33.
Free wheeling, in centrifugals, use of, June, p.28.
Magnetic type,
 announcement of, May, p.73.
 picture projector, use with, Nov., p.59.
One-way type, announcement of, Dec., p.70.
Pawl and roller type, mechanism of, July, p.52.

Contributors:

Abbott, Ernest J., Dec., p.41.
Alexander, F. H., March, p.98.
Almen, J. O., June, p.40.
Ault, Prof. E. S., Feb., p.46; March, p.79.
Bachner, Edward F., March, p.29.
Batesole, D. E., Oct., p.86.
Billings, J. Harland, Nov., p.47.
Bogert, Ormonde, April, p.31.
Brootskoos, S. D., Jan., p.30.
Brown, E. C., Feb., p.27.
Burrell, E. P., March, p.27.
Chapman, George T., Feb., p.39.
Clark, Allen F., Jan., p.26; March, p.34; April, p.25; May, p.38;
 July, p.28; Aug., p.43; Oct., p.55; Dec., p.23.
Climeninst, William O., June, p.43.
Dazley, F. C., Aug., p.31.
Day, P. C., Oct., p.51.
De Forest, A. V., July, p.32.
Dickens, R. G., Oct., p.84.
Dickey, Roger C., May, p.49.
Eckland, Everett B., Aug., p.21.
Evans, Robert G. N., March, p.96; June, p.51.
Faires, V. M., July, p.39.
Flincke, D. M., Sept., p.23.
Forbes, A. W., April, p.51.
Franz, Frederick, Aug., p.47.
Gepfert, J. H., April, p.51.
Gibson, E. E., Oct., p.50.
Graef, O. K., Sept., p.35; Oct., p.35.
Grimes, Charles P., April, p.50.
Grover, Frederick, May, p.23; Sept., p.42.
Hall, Peter, Oct., p.52.
Harder, Oscar E., March, p.15.
Hart, W. A., Oct., p.51.
Haynes, J. L., July, p.36.
Hazleton, H. B., Jan., p.47.
Hearne, Clyde, May, p.50; Nov., p.43.
Heinle, W. C., Oct., p.52.
Hem, H. W., Jan., p.19.
Hoffman, Paul, July, p.48.
Honegger, John A., Jan., p.45; May, p.49; July, p.48; Aug., p.47; Oct., p.86.
Hubbard, Guy, June, p.35; Aug., p.39; Oct., p.29; Nov., p.37.

Hyler, John E., May, p.50; June, p.50.
Johnson, Charles B., Oct., p.38.
Jordon, Robert C., April, p.49.
Karelitz, G. B., March, p.79.
Kasper, L., Oct., p.84.
Kinkead, Robert E., Oct., p.47.
Kissinger, R. G., Oct., p.84.
Laszlo, A., June, p.40.
Link, M. W., Oct., p.51.
MacLaren, N. B., Aug., p.33.
Maleev, V. L., May, p.34; Sept., p.29.
Manby, M. F., July, p.21.
Marsh, Howard G., Oct., p.53.
Meyers, Willis G., Jan., p.37; Feb., p.34; March, p.79.
Miller, E. W., Feb., p.46.
Nachod, Carl P., Jan., p.47; June, p.51; Aug., p.47.
Ormondroyd, J., Dec., p.37.
Page, G. A., Oct., p.74.
Sayre, M. F., Feb., p.45.
Schmitter, W. P., Oct., p.42.
Schubert, Frank, Jan., p.45; March, p.79; May, p.43.
Sellers, Coleman, 3rd, April, p.49.
Seybold, L. W., March, p.29.
Smith, E. W. P., Oct., p.58.
Smith, Herman A., Feb., p.31.
Snader, Ira J., Oct., p.52.
Spooner, William B., Oct., p.63.
Stott, Louis L., May, p.31.
Tichinsky, L. M., April, p.37.
Tufts, L. R., March, p.27.
Van Doren, Harold, March, p.27.
Veith, Harold B., Jan., p.34.
Wahl, A. M., April, p.50.
Warren, Dean M., Feb., p.45.
Wehr, William G., Oct., p.71.
Weise, K. R., Oct., p.52.
Whittaker, U. A., March, p.27; Nov., p.41.
White, Trescott S., Aug., p.36.
Whiting, Harold W., Feb., p.19; April, p.51.
Whittaker, Lloyd A., June, p.50.
Willard, William C., March, p.22; April, p.40.
Wolf, Austin M., Nov., p.27.
Woodling, George V., June, p.23; Sept., p.38; Dec., p.30.
Woolson, H. T., Oct., p.50.

Controllers:

See also under Parts (Itemized Index).
Air operated type, announcement of, June, p.72.
Bimetal, discussion of, June, p.35.
Diaphragm operated, for regulating bin level, June, p.27.
Governors,
 automobile, design of, Nov., p.31.
 centrifugal, gear shift, use of, for, Nov., p.44.
Temperature regulating, announcement of, March, p.106.
Valve control, announcement of, April, p.77.

Controls (Electrical):

See also under Parts (Itemized Index).
Application of, Aug., p.39.
Circuit breakers, multibreaker load center, announcement of, Aug., p.54.
Contactors, coin machine, use of, in, Aug., p.23.
Current overload protecting device, announcement of, Feb., p.68.
Electro-magnetic type, employment of, Feb., p.29.
Electronic devices,
 equipment control unit, announcement of, Aug., p.66.
 refrigeration, use of, with, July, p.27.
Feed control panel, announcement of, Oct., p.95.
Flow, regulating of, Sept., p.28.
Hydraulics, combining with, Feb., p.27.
Lathes, combining in, Feb., p.25.
Machine tools, combining in, Nov., p.39.
Pushbuttons,
 die jig, employment of, in, Feb., p.32.
 use of, general, June, p.33.

Radios, use of, with, Dec., p.25.
Relays,
 auxiliary type, announcement of, Sept., p.68.
 reset type, announcement of, March, p.105.
 synchronous motors, use with, Sept., p.68.
Resistance units, die jig, employment of, in, Feb., p.32.
Rheostats, die jig, employment of, in, Feb., p.32.
Safety limit stop, announcement of, Feb., p.73.
Solenoids,
 alternating current type, announcement of, Sept., p.70.
 brake, announcement of, Dec., p.65.
 spring tension, use of, for, Aug., p.50.
 milling machine, use of, in, June, p.31.
Starters,
 arc extinguishing, announcement of, June, p.62.
 automatic, announcement of, Nov., p.66.
 direct current mill type, announcement of, Nov., p.70.
 non-reversing line starters, announcement of, Nov., p.62.
 rheostat, description of, Nov., p.33.
Switches,
 application of, June, p.31.
 cam lever type, announcement of, Jan., p.69.
 cutoff type, announcement of, Sept., p.72.
 field discharge type, announcement of, Aug., p.60.
 float operated type, announcement of, Oct., p.96.
 hydraulics, operation of, Jan., p.23.
 magnetic type, announcement of, Feb., p.64.
 mercury type, announcement of, March, p.100; Dec., p.67.
 mercury type, use of, June, p.27.
 midget type, announcement of, Nov., p.76.
 pilot type, announcement of, May, p.72.
 plug type, bimetallic in, March, p.90.
 pressure controlling, announcement of, June, p.78.
 shipper-rod-operated type, announcement of, Feb., p.72.
 simplification of operation, use for, Dec., p.66.
 swing out type, announcement of, May, p.77.
Timers,
 automatic, announcement of, Oct., p.102.
 die jig, employment of, in, Feb., p.32.
 recycling type, announcement of, Aug., p.62.
 repeating interval type, announcement of, April, p.72.
Transformers, speed regulating, announcement of, March, p.108.

Conveyors:

See also under Parts (Itemized Index).
Abrasive machinery, use of, in April, p.27.
Belts, protection of, Aug., p.27.
Corners, transmitting bulk material around, Jan., p.25.
Curbs for, to retain materials, Jan., p.24.
Integrating mechanism, use of, in, May, p.28.
Open mesh chain type, announcement of, July, p.58.
Roller arrangement, retards descent in, Jan., p.24.
Rollers, ball bearing type, announcement of, March, p.107; June, p.74.
Self-feeding, description of, Oct., p.33.
Shaker type, improved drive for, Feb., p.26.
Strip steel, use of, for, May, p.29.
Wrapping machine, use of, for, Sept., p.23.

Cords:

See Electrical Accessories; also under Parts (Itemized Index).

Corrosion:

ASME, discussion of, at, Dec., p.34.
Metals, resistance of, to, Sept., p.33.

Couplings:

See also under Parts (Itemized Index).
Chain type,
 discussion of, Feb., p.54.
 double strand, announcement of, July, p.62.
Flexible type,
 announcement of, Aug., p.58.
 with floating load cushions, announcement of, April, p.66.

Friction, use of, for pipe, Aug., p.27.
Gear type flexible, announcement of, June, p.65.
Thread-on wire type, announcement of, July, p.66.

Cross Sections:

Timely comments, Jan., p.81; Feb., p.81; March, p.118; April, p.86; May, p.89.

D

Design Calculations:

See Itemized Index

Design Department:

See also Organization and Equipment (Itemized Index).
Adjustable curve, announcement of, Oct., p.104.
Blueprinters, announcement of, Jan., p.76; Feb., p.75; Aug., p.68; Dec., p.72.
Cameras, use of, in, April, p.28.
Dimensioning, points on, Nov., p.57.
Drafting machine, announcement of, March, p.109; Oct., p.104.
Drawing files, advantage of, for, Aug., p.28.
Drawing table, announcement of, Aug., p.70.
Erasers, with glass fibers, announcement of, Aug., p.71.
Noise meter, announcement of, Feb., p.74.
Personnel, training of, in, Jan., p.47; Feb., p.46; March, p.98; May, p.50.
Sound level indicator, announcement of, June, p.79.
Sound-level meter, announcement of, Aug., p.70.
Standards book, value of, June, p.39; Oct., p.30.
Stroboscopes, announcement of, Jan., p.75; March, p.105.
Stroboscope, use of, in, April, p.29.

Designers:

See Design Department.

Design Features in New Machines:

Jan., pp.42, 43; Feb., pp.42, 43; March, pp.40, 41; April, pp.46, 47; May, pp.46, 47; June, pp.46, 47; July, pp.42, 43; Aug., pp.42, 43; Sept., pp.44, 45; Oct., pp.60, 61; Nov., pp.50, 51; Dec., pp.44, 45.

Drives:

See also under Parts (Itemized Index).
Chains, overload, reducing of, Aug., p.18.
Fan, unique arrangement of, Feb., p.24.
Propeller, auto, unique design for, Nov., p.28.
Shaker conveyor, increasing versatility of, Feb., p.26.
Shafting,
 angular misalignment overcome, Dec., p.68.
 rigidity of, necessity for, June, p.38.
 vibration, elimination of, Sept., p.25.
Speed reducers,
 cone worm type, announcement of, Sept., p.64.
 fan drive, use of, in, Feb., p.24.
 motorized type,
 explosion proof, announcement of, Sept., p.60.
 fractional horsepower, announcement of, Jan., p.70; Feb., p.62.
 machine tools, use with, Aug., p.41.
 planetary type, announcement of, May, p.72.
 worm gear type, announcement of, Jan., p.67.
Transmissions,
 heavy duty type, announcement of, May, p.78.
 variable speed type, design of, July, p.25.
Turbines, "C" type, announcement of, Nov., p.72.
Variable speed,
 combined with motor, announcement of, April, p.64; June, p.74; Nov., p.68.
 hydraulic type, announcement of, March, p.102.
 motorized and gear type, announcement of, July, p.68.
 motorized type, announcement of, Jan., p.74.

Die Castings:

See Castings.

E

Eccentrics:

Clamping, use of, for, June, p.50.
Paddle wheel, application of, to, Aug., p.52.
Positive gear reduction, use of, in April, p.28.
Spindle automatics, use of, with, Oct., p.92.
Variable speed, use of, for, July, p.25.
Vibration creating, announcement of, March, p.104.
Wrapping machines, use of, in, May, p.24.

Editorials:

Appearece Aids Effectiveness, Nov., p.53.
Change!, June, p.49.
Credit the Machine!, April, p.48.
Design and Development Turning Losses into Profit, May, p.48.
Design of Automobile Symbolizes General Machine Trend, Nov., p.53.
Design Will Benefit!, July, p.45.
Far-Sighted Vision, Aug., p.45.
Faster Production Means More Purchasing—and Increased Employment, Sept., p.47.
Flexibility of Mind Is Essential in Designing Machines, June, p.49.
Flow of New Engineering Materials Keeps Designers on Toes, March, p.42.
Have You Tried It? Sept., p.47.
Higher Production Necessary in Replacing Lost Physical Frontiers, Jan., p.44.
Know Your Alloys?, Feb., p.44.
Knowledge Cannot Become "Specialized" without Broad Basic Foundation, April, p.48.
On to the Show! Oct., p.77.
Patent Centennial Calls Attention to Progress Through Invention, Dec., p.47.
Patent System Is Due for Change—the Sooner the Better, Aug., p.45.
Position Reversed, Dec., p.47.
Reduce Noise!, May, p.48.
Sound Design Will Help Build a Vast New Industry, Oct., p.77.
Utilization of Agricultural Products Means New Machinery, July, p.45.
Watch 1936, Jan., p.44.
Western Civilization Owes Present Status to Design Work of James Watt, Feb., p.44.
Will Machines Be Taxed?, March, p.42.

Electrical Equipment:

Appliance connector and detachable cord, announcement of, Nov., p.62.
Cords,
 announcement of, Feb., p.74.
 selection of, Aug., p.31.
Outlets, multiple type, announcement of, May, p.75.
Panels, protective type, announcement of, May, p.76.
Plugs,
 discussion of, Aug., p.31.
 multiple circuit, six pole, announcement of, Aug., p.64.
 spring action blades, announcement of, Nov., p.70.

Electronic Devices:

See under Controls (Electrical);
also under Parts (Itemized Index).

Engineering Department:

See Design Department.

Engineering Department Equipment:

Announcements of, Jan., p.75; Feb., p.74; March, p.109; June, p.79; Aug., p.68; Sept., p.73; Oct., p.104; Nov., p.78; Dec., p.72.

Engines:

Diesel type, protecting fuel for, July, p.28.
Solar heat, adaption of, for, Oct., p.26.

F

Fastenings:

See under Parts (Itemized Index).

Fatigue of Metals:

See Stresses.

Filters:

Employment of, July, p.28.
Pumps, use of, with, April, p.82.
Self-cleaning type, announcement of, Sept., p.62.

Finishes:

See also Itemized Index.

Asphalt paint, employment of, March, p.26.
Ball type anodes, announcement of, Jan., p.74.
Copper plating, announcement of, Aug., p.64.
Corrosion resisting, for zinc alloys, announcement of, Sept., p.60.
Enamels,
air-drying, announcement of, Sept., p.66.
for zinc and aluminum die castings, announcement of, Sept., p.70.
Heat resisting, announcement of, June, p.78.
Primer coat, rubber base type, announcement of, April, p.75.
Zinc coating,
announcement of, June, p.62.
developments in, Nov., p.45.

Flame Machining:

See Production Department.

Forces:

Yoke arm, determination of, in, Nov., p.43.

G

Gears:

See also under Parts (Itemized Index).

Contact of, Nov., p.49.
Design of, Oct., p.42.
Elliptical, design of, Sept., p.42.
Heat treatment of, July, p.40.
Hypoid, automobiles, use of, for, Nov., p.28.
Materials for, discussion of, May, p.37; July, p.39.
Noise, elimination of, in, June, p.37; Oct., p.42; Dec., p.43.
Nonreversing type, April, p.28.
Shims, meshing, use of, for, Nov., p.35.
Small, use of, in watches, July, p.24.
Spur, design of, Nov., p.47.
Steels, selection of, for, Feb., p.35.
Teeth, cutting of, Nov., p.47.
Variable speed, use of, May, p.27.
Wire forming, application for, Oct., p.82.
Worm, analysis of contact, May, p.81.

Governors:

See Controllers.

H

Hard Facing:

See also under Materials (Itemized Index).

Automobiles, use for, Oct., p.48.
Cast-on protection, securing with, March, p.20.
Crankshaft, new process of, Nov., p.45.
Discussion of, Oct., p.58.
Electricity, use of, for, Oct., p.26.
Gas flame, use of, for, Oct., p.57.
Shredders, employment of, for, March, p.19.

Heating Units:

See also under Parts (Itemized Index).

Air, electricity, use of, for, Aug., p.27.

Finned type, announcement of, March, p.104.
Gasoline gauge, use of, in, Dec., p.28.
Vanес, metal, increase heating area, Dec., p.72.

Hose:

See under Parts (Itemized Index).
Air handling, announcement of, July, p.66.
Synthetic rubber, use of, for, Jan., p.29.
Twin tube type, announcement of, May, p.72.

Human Element:

Cost plate, influencing, by, July, p.27.
Lighting, considering, Jan., p.34.
Machine costs, emphasizing, July, p.27.
Machine tools, fitting, to, Nov., p.39.
Noise, elimination of, June, p.37.
Operators, protecting, July, p.27.

Hydraulics:

See also under Parts and Principles (Itemized Index).
Auto jack, description of, Oct., p.32.
Boring machine, use of, in, July, p.26.
Clamshell bucket, use of, for, May, p.29.
Electrical controls, combining with, Feb., p.27.
Feed control unit, announcement of, June, p.70.
Lathe, use of, for, May, p.27.
Mining machine, use of, in, Jan., p.60.
Pressing machine, control of, by, Dec., p.56.
Propeller, pitch regulation, use of, in, Oct., p.41.
Pumps, design of, May, p.38.
Pumps and controls for, announcement of, Jan., p.71.
Switch operation, use of, for, Jan., p.23.
Variable speed drives, announcement of, March, p.102.

I

Ideas:

Scanning the field for: Jan., p.23; Feb., p.24; March, p.19;
April, p.28; May, p.28; June, p.27; July, p.25; Aug., p.26;
Sept., p.25; Oct., p.32; Nov., p.31; Dec., p.28.

Instruments:

See also under Parts (Itemized Index).
Ammeter, magnetic flux type, Sept., p.26.
Brake tester, description of, Sept., p.26.
Dials, length indicating, April, p.30.
Meters, sound level type, announcement of, Nov., p.78.
Socket dial thermometers, announcement of, March, p.107.
Tachometers, building in, April, p.30.
Telescope, design of bearings for, Dec., p.37.
Thermometers,
building in, April, p.30.
building in, announcement of, Sept., p.66.
Thermostats, new type of, Sept., p.52.
Weighing, description of, Dec., p.29.

L

Lights:

Adjustable type, announcement of, Oct., p.105.
Application of, in machinery, Jan., p.34.
Building in, Jan., p.34.
Grinder, attached to, April, p.49.
Lamp standards, announcement of, April, p.75.
Location of, discussion on, Feb., p.45.
Mercury vapor and incandescent, announcement of, Sept., p.73.

Light Sensitive Devices:

See Electronic Devices under Controls (Electrical).

Lubrication:

See also under Parts (Itemized Index).
Automobile, type of, for, Nov., p.30.
Bearings,
 discussion of, for, April, p.39; May, p.50.
 insuring, for, June, p.51.
Bushings, oil reservoir graphite bronze, announcement of Nov., p.74.
Filters, application of, in, July, p.28.
Fittings, threaded drive type, announcement of, Nov., p.64.
Gears, use of, for, June, p.38.
Grooving, of bearings, to insure, Oct., p.37.
Ink, use of, for, Oct., p.36.
Oil film, theory of, April, p.38.
Oil feeders,
 announcement of, Jan., p.70.
 bottle type, announcement of, Jan., p.73.
 constant level type, announcement of, March, p.109.
 flow regulating, announcement of, April, p.70; Aug., p.56
Pumps, method of, for, Sept., p.25.

M

Machinery:

Abrading, mechanism of, July, p.48.
Abrasive cleaning, April, p.25.
Automatic feed, description of, Oct., p.33.
Automatic phonograph, design of, Jan., p.64; Aug., p.21.
Bulldozer, welding, fabrication of, by, Oct., p.72.
Boring machine, operation of, July, p.26.
Cameras, footage indicator for, Feb., p.56.
Canning, use of vacuum in, Feb., p.50.
Casting, description of, March, p.92.
Centrifugals, description of, June, p.28.
Cloth measuring, gaging device in, Jan., p.23.
Conveying, with integrator, May, p.28.
Cotton doffing, mechanism, of, May, p.66.
Cranes, welding, use of, for, Oct., p.52.
Cutter type mining machine, parts of, Jan., p.60.
Die jig, controls and motors for, Feb., p.31.
Drilling, reciprocating mechanism of, Aug., p.47.
Drink shaker, description of, Oct., p.34.
Electrification of, discussion of, Aug., p.39.
Fans,
 drive for, Feb., p.24.
 materials employed in, March, p.22; April, p.40.
 reversible drive for, April, p.58.
Grinders, telescoping sleeve design in, Jan., p.24.
Grocery scale, design of, Jan., p.19.
Ice flaking, welding, use of, for, Oct., p.65.
Ice pulverizer and loader, description of, Oct., p.33.
Integrator, design of, Oct., p.38.
Lathes,
 combining controls in, Feb., p.24.
 driving of, June, p.27.
 improvements in, Feb., p.25.
 use of air for operation, May, p.29.
Meat slicing, description of, Nov., p.60.
Milling, electric, discussion of, June, p.30.
Mining, materials employed in, March, p.16.
Packaging, level control of, June, p.27.
Paddle wheel, mechanism of, Aug., p.52.
Paper tube forming, description of, Jan., p.58.
Power shovels, design of boom for, March, p.21.
Power take-off, description of, Dec., p.29.
Presses, analysis of frames for, Jan., p.30.
Radios, application of, to, Dec., p.23.
Refrigerators, shafts of, sealing, Jan., p.62.
Rock drilling, mechanism of, May, p.64.
Rotary kiln, description of, Nov., p.33.
Saw trimmer, design of, May, p.41.
Scrapers, design of, Feb., p.27.
Shaker conveyor, improved drive for, Feb., p.26.
Super-fractionator, achieving compactness in, Feb., p.26.
Tool, design of, Nov., p.37.

Tube mills, cooling of, June, p.56.
Typewriter, key mechanism for, April, p.56.
Vacuum cleaner, description of, Nov., p.40.
Vibrator, for concrete, description of, Oct., p.34.
Washers, indexing device for, Feb., p.52.
Washing, fabrication of, Oct., p.69.
Waste disposal, materials in, March, p.19.
Watches, design of, July, p.21.
Winding, variable motion in, May, p.49.
Wire covering, tension, maintaining of, in, Oct., p.88.
Wire, mechanism of, May, p.62.
Wrapping,
 mechanism of, May, p.23.
 use of refrigeration with, Sept., p.23.

Magnetism:

Brake, mixers, description of, Oct., p.32.
Fatigue cracks in metal, locating, by, July, p.34.
Sheets, separation of, by, Aug., p.38.

Manufacturers' Publications:

Jan., p.78; Feb., p.78; March, p.115; April, p.83; May, p.86;
June, p.85; July, p.75; Aug., p.74; Sept., p.78; Oct., p.109;
Nov., p.84; Dec., p.76.

Materials:

See also (Itemized Index).
All types of materials used in machinery are included in the Alloy Directory, March, pp.43-78.
Alloy irons,
 advantages of, discussion on, March, p.27.
 developments in, March, p.17.
Alloy steels,
 abrasion reduction, use of, in, April, p.43.
 announcement of, Oct., p.103.
 application of, March, p.37.
 coin machines, use of, in, Aug., p.22.
 developments in, March, p.16.
 fans, employment of, in, March, p.23; April, p.40.
 heat resistance, announcement of, June, p.68.
 scraper, use of, in, Feb., p.27.
 springs, use of, in, Feb., p.20.
 weldability of, Oct., p.48 and 50.
Aluminum,
 advantages of, discussion on, March, p.27.
 die castings of, employment of, March, p.19.
 extruded parts of, presentation of, Feb., p.33.
 fans, employment of, in, March, p.26; April, p.42.
 grocery scale, use of, in, Jan., p.22.
 telescopic mirror, use of, on, July, p.25.
 welding machine for, use of, Sept., p.27.
 welding of, Nov., p.57.
Aluminum alloys, corrosion of, factors in, Dec., p.35.
Babbitt, fans, employment of, in, March, p.23.
Bakelite, ammeter housing, use of, for, Sept., p.26.
Beryllium, discussion of, for springs, May, p.31.
Bimetals,
 application of, June, p.35.
 plug switch, use of, in, March, p.90.
Brass,
 die castings, employment of, March, p.34.
 fire hazard, overcoming, use of, in, April, p.43.
Bronze,
 bearings, use of, for, April, p.37.
 Bushings, use of, for, Nov., p.31.
Cast iron, corrosion, resistance to, Dec., p.35.
Chromium,
 locomotive rod, use of, for, Sept., p.27.
 telescopic mirror, use of, on, July, p.25.
Chrome-nickel, employment of, Aug., p.34.
Copper, brine tank, use of, for, Sept., p.24.
Copper alloys,
 fans, employment of, in, March, p.26.

springs, use for, May, p.31.
with cobalt and beryllium, announcement of, Aug., p.58.

Cork,
brine tank, use of, for, Sept., p.24.
rubber impregnated, Jan., p.28.
vibration dampening, use for, April, p.43.

Crystallization of, discussion on, March, p.79.

Elinvar, use of, for watches, July, p.24.

Felt,
dampening vibration with, April, p.34.
washers, use for, April, p.35.

Future trends, prediction on, March, p.15.

Glass,
flexible fibers, April, p.29.
insulating, uses of, for, Jan., p.40.

Igneonite, filters, use of, in, July, p.73.

Jewels, watch journals, use of, for, July, p.50.

Magnesium,
cleaner, use of, for, Nov., p.40.
die castings, employment of, March, p.34.
uses of, discussion on, March, p.27.

Monel, springs, use of, for, Nov., p.54.

Nickel alloys,
corrosion, resistance to, Dec., p.36.
developments in, March, p.16.
fans, employment of, in, March, p.23; April, p.40.
springs, use of, for, Feb., p.22.

Paper, filter washers, use of, for, July, p.73.

Plastics,
acid resisting, announcement of, April, p.74.
advantages of, discussion on, March, p.28.
application of, March, p.28.
bearings, use of, for, April, p.37.
die castings, combining with, March, p.20 and p.35.
fans, use of, for, Sept., p.27.
friction resistance, announcement of, Feb., p.74.
grocery scale, use of, in, Jan., p.19.
heat resistance, announcement of, Oct., p.102.
high impact type, announcement of, May, p.70.
journals, use of, for, Sept., p.35.
phenolic, discussion of, Sept., p.34; Oct., p.35.
properties of, March, p.31.
radios, use of, for, Dec., p.24.
vacuum cleaner, use of, in, Nov., p.41.
water resistance type, announcement of, Jan., p.74.

Rubber,
acid pumps, use of, on, March, p.21.
air spring, use of, for, March, p.20.
casting of, Oct., p.26.
conveyors, use of, in, Jan., p.24.
corrosion, resisting with, March, p.26.
fan blades, use of, for, April, p.29.
frame mountings, use of, for, Nov., p.44.
pillow block, use of, for, Sept., p.25.
synthetic type, presentation of, Jan., p.26.
trains, use of, in, July, p.18.

Solder, porcelain and metal, use of, for, Sept., p.28.

Steels,
cold rolled, stabilized type, announcement of, June, p.65.
determining fatigue of, July, p.32.
gears, selection of, for, Feb., p.35; July, p.39.
high-tensile type, announcement of, Jan., p.69.
selection of, discussion of, Aug., p.34.
springs, use of, in, July, p.50; Feb., p.19.
welded gears, use of, for, May, p.37.
welded, use of, for, Oct., p.47.

Steel (Alloy-Clad),
developments in, March, p.18.

Wood, use of, in bearings, April, p.38.

Zinc,
die castings, employment of, March, pp.19 and 34.

Zinc alloy, hydraulic jack, use of, for, Oct., p.32.

Mechanisms:

See in Itemized Index.

Motors:

See also under Parts (Itemized Index).
Adaptation to machines, Aug., p.40.
Aircraft control, announcement of, Oct., p.99.
Backgeared type, announcement of, Feb., p.70; July, p.68.
Die jig, arrangement of, in, Feb., p.31.
Explosion proof, fan-cooled, announcement of, Nov., p.74.
Fan cooled, totally enclosed type, announcement of, Jan., p.72; June, p.76.
Fan drive, arrangement in, Feb., p.24.
Heavy industrial duty type, announcement of, June, p.68.
High speed type, use of, June, p.28.
Milling machine, use of, in, June, p.31.
Mixers, use of, for, Oct., p.32.
Noise, elimination of, in, Dec., p.43.
Pivotedly mounted, April, p.58.
Rubber supported, announcement of, Oct., p.103.
Saw trimmer, employment of, in, May, p.41.
Shell type, use of, June, p.31.
Single phase, announcement of, Feb., p.66.
Splashproof, announcement of, April, p.66.
Squirrel-cage, announcement of, Oct., p.100.
Steam-electric, announcement of, Sept., p.20.

N

New Machines:

Listing of, Jan., p.41; Feb., p.41; March, p.40; April, p.45; May, p.45; June, p.48; July, p.44; Aug., p.44; Sept., p.46; Nov., p.52; Dec., p.46.

New Materials and Parts:

Announcements of, Jan., p.67; Feb., p.62; March, p.100; April, p.64; May, p.70; June, p.62; July, p.58; Aug., p.58; Sept., p.60; Oct., p.95; Nov., p.62; Dec., p.64.

Noise:

Elimination and cost, discussion of, Dec., p.41.
Gears, elimination of, in, Oct., p.42.
Machinery, reducing of, in, Dec., p.76.

Nomograms:

Horsepower, calculation of, by, June, p.51.
Radius of gyration, determining by, Aug., p.46.
Rolled surfaces, use with, Nov., p.57.

Noteeworthy Patents:

Jan., p.58; Feb., p.50; March, p.90; April, p.56; May, p.62; June, p.56; July, p.54; Aug., p.50; Sept., p.52; Oct., p.88; Nov., p.59; Dec., p.56.

Nozzles:

See also under Parts (Itemized Index).
Spray type, announcement of, July, p.64.

O

Obituaries:

Bartlett, George M., Oct., p.80.
Bethel, Claude, July, p.47.
Boyd, Alexander H., May, p.54.
Goodman, John, Jan., p.54.
Hall, James A., Dec., p.54.
Hoover, Leslie E., Jan., p.54.
Hornung, Harry L., Feb., p.48.
Hughes, Edward, Jan., p.54.
Jeavons, William R., March, p.84.
Kintner, Dr. S. M., Nov., p.56.
Lockwood, Charles S., July, p.47.
Lomb, Henry C., April, p.54.
Lott, Samuel H., May, p.54.

Low, Fred R., March, p.84.
McColl, Jay Robert, Dec., p.54.
McEldowney, Harry A., March, p.84.
Mitchell, Robert, March, p.84.
Morrow, Bryce E., Feb., p.48.
Peyton, William C., May, p.54.
Rice, E. W., Jr., Jan., p.54.
Shore, Albert F., April, p.54.
Spire, William H., May, p.54.
Stone, George Cameron, Feb., p.48.
Taylor, Albertis C., Aug., p.49.
Whitney, Edwin H., Jan., p.54.

P

Packing Glands and Packing:

See also under Parts (Itemized Index).
Bearing seal, design of, June, p.58.
Bellows type, for tractor, Nov., p.32.
Fluid, prevention of escape, Oct., p.90.
Motors, sealing of, by, Dec., p.58.
Plastic type, with antifrictional dry-graphite lubrication, announcement of, Aug., p. 60.
Refrigerator shaft, sealing, Jan., p. 62.
Unit seals, synthetic rubber, use of, in, Jan., p. 29.

Patents:

See also Noteworthy Patents.
Ideas, patentability of, June, p. 23.
Infringements, prevention of, Sept., p. 38.
Regulations, discussion of, Dec., p. 30.

Personal Items:

Compilation of, Jan., p. 52; Feb., p. 48; March, p. 82; April, p. 54; May, p. 52; June, p. 54; July, p. 47; Aug., p. 49; Sept., p. 50; Oct., p. 80; Nov., p. 55; Dec., p. 50.

Photoelectric Cells:

See Electronic Devices under Controls (Electrical).

Pistons:

See under Parts (Itemized Index).

Plugs (Electrical):

See Electrical Equipment; also under Parts (Itemized Index).

Pneumatic Devices:

Cooling with, in hammer, June, p. 29.
Lathe, use of, in, May, p. 29.

Production Department:

Beryllium springs, heat treatment, of, in, May, p. 31.
Brazing, advantage of, in, March, p. 17.
Drawing files, advantage of, for, Aug., p. 28.
Flame machining, employment of, April, p. 29.
Machine tools, use of, in, Nov., p. 39.
Machining, eliminating by welding design, Jan., p. 23.
Nitriding, elimination of stress concentration, use of, for, May, p. 36.
Sheets, separation by magnetism, Aug., p. 38.
Welding, requirements for, Oct., p. 50.
Welding, standardization of, for, Oct., p. 62.

Professional Viewpoints:

Jan., p. 45; Feb., p. 45; March, p. 79; April, p. 49; May, p. 49; June, p. 50; July, p. 48; Aug., p. 46; Oct., p. 82; Nov., p. 57.

Pulleys:

See under Parts (Itemized Index).

Pumps:

See also under Parts (Itemized Index).
Acid handling, design of, March, p. 21.
Air, motorized type, announcement of, July, p. 64.
Air, types of, April, p. 31.
Back-gearred, rotary pump, announcement of, Nov., p. 64.
Bag and carton filling, use of, in, April, p. 33.
Blower type, use of, April, p. 31.
Brine circulation, use of, for, Sept., p. 24.
Filters, use of, in, April, p. 32.
Gear, propeller pitch, regulation of, by, Oct., p. 107.
Helical geared type, announcement of, Jan., p. 67.
Hot liquid handling, announcement of, Jan., p. 74.
Motor-driven type, announcement of, July, p. 62.
New designs of, Sept., p. 25.
Noise, elimination of, in, Dec., p. 43.
Oil burner, announcement of, April, p. 74.
Paper feeder, use of, in, April, p. 33.
Radial type, announcement of, July, p. 58.
Reciprocating type, announcement of, Feb., p. 72.
Small capacity, announcement of, Feb., p. 68.
Spur gear, new design of, Sept., p. 52.
Suction type, uses of, April, p. 32.
Varied purposes, discussion of, for, May, p. 38.

R

Railroads:

Air conditioning, use of, for, May, p. 30.
Bushing, composite, development of, for, Nov., p. 31.
Chromium, locomotive rod, use of, for, Sept., p. 27.
Couplers, improved design of, Jan., p. 25.
Locomotive reverse-lever arm, design of, April, p. 29.
Track, testing of, Aug., p. 26.

Research Publications:

Compilation of, Feb., p. 79; March, p. 115; May, p. 87; June, p. 87; July, p. 77; Aug., p. 76; Sept., p. 80; Oct., p. 112; Nov., p. 90; Dec., p. 78.

S

Sales and Design:

See Style and Design.

Scanning the Field for Ideas:

Jan., p. 23; Feb., p. 24; March, p. 19; April, p. 28; May, p. 28; June, p. 27; July, p. 25; Aug., p. 26; Sept., p. 25; Oct., p. 32; Nov., p. 31; Dec., p. 28.

Shafting:

See under Drives; also under Parts (Itemized Index).

Shapes:

Extruded aluminum, discussion of, Feb., p. 33.

Solenoids:

See under Controls (Electrical).

Speed Reducers:

See under Drives; also Drives under Parts (Itemized Index).

Springs:

See also under Parts (Itemized Index).

Beat controlling, April, p. 60.
Disk, discussion of, June, p. 40.
Extension type, discussion of, Feb., p. 23.
Helical type, designing, Feb., p. 19; April, p. 49; May, p. 31.
Plating, effect on, Nov., p. 54.
Steel wire, use of, for, July, p. 50.
Surge frequency, determining, Jan., p. 47.
Valve cushioning, used for, May, p. 30.
Watch, use of, in, July, p. 23.

Standardization:

See also under Itemized Index.
Advantages of, June, p. 39.
Handbook, discussion of, Oct., p. 29.
Need for, June, p. 50.
Sizes, need of, for, Aug., p. 18.

Stresses:

Accommodating high, March, p. 23.
Calculation of, localized, May, p. 34.
Gear teeth, discussion of, in, July, p. 39.
Predicting values of, July, p. 32.
Press frame, determination of, Jan., p. 30.
Reducing concentration of, Jan., p. 37; Feb., p. 34.
Ribs, calculation of, in, Sept., p. 31.
Shrink fits, calculation of, from, June, p. 43.
Springs,
copper, calculation of, in, May, p. 33.
determination of, in, Feb., p. 19; April, p. 50.
disk, calculation of, in, June, p. 40.
Welded parts, discussion of, in, July, p. 72.

Style in Design:

Appearance,
designing for, Jan., p. 19.
improving of, Aug., p. 25; Jan., p. 19.
machinery, value of, for, Aug., p. 40.
machine tools, building, into, Dec., p. 20.
Welding, improvement by, Oct., p. 53, 54 and 71.

T

Testing:

Brakes, method of, Sept., p. 26.
Bearing ratings, determining by, July, p. 38.
Cameras, use of, for, May, p. 30.
Fatigue of metals, for, July, p. 34.
Rail inspection mirror, use of, for, Aug., p. 26.

Topics:

Digest of, March, p. 86; April, p. 22; May, p. 20; June, p. 20;
July, p. 18; Aug., p. 18; Sept., p. 20; Oct., p. 26; Nov., p. 24;
Dec., p. 20.

Transmissions:

See under Drives; also Drives under Parts (Itemized Index).

Tubing:

Composite materials, use of, for, Oct., p. 26.
Seamless steel,
announcement of, Feb., p. 62.
employment of, Feb., p. 30.

V

Vacuum:

Canning machinery, use of, in, Feb., p. 50.
Employment of, in windshield wiper, Jan., p. 25.

Valves:

See also under Parts (Itemized Index).
Air control, announcement of, May, p. 74.
Canning machinery, design of, in, Feb., p. 50.
Flat springs, noise elimination, use for, May, p. 30.
Synthetic rubber, use of, in, Jan., p. 29.
Solenoid controlled, announcement of, June, p. 66.

V-Belts:

See under Belting.

Velocities:

Determination of, Feb., p. 45.

Vibration:

Elimination,
belt drive, use of, for, July, p. 54.
cork, use of, for, April, p. 43.
general method of, Nov., p. 60.
Flow, use of, for regulating, Sept., p. 28.
Isolation of, April, p. 34.
Resonance, elimination in, Sept., p. 56.

W

Welded Parts and Equipment:

See also under Parts (Itemized Index).
Advantages of, July, p. 35.
Advancements in, July, p. 18.
Aluminum alloy, use of, for, Nov., p. 57.
Bushing, composite, use of, for, Nov., p. 31.
Copper, use of, for, Nov., p. 46.
Cost, calculation of, for, Oct., p. 62.
Discussion of, Oct., p. 53.
Electrodes,
pneumatically controlled, Sept., p. 27.
weld of phosphor bronze, March, p. 104.
weld of stainless steel, Jan., p. 72.
weld of low chromium steels, Nov., p. 62.
Failure of, cause of, Dec., p. 48.
Future trends of, Oct., p. 47.
Gears, built up, by, May, p. 37.
Machining, eliminating, by, Jan., p. 23.
Portable machine, description of, Sept., p. 27.
Scraper, employment of, in, Feb., p. 27.
Shot welding, importance of, March, p. 17.
Shovel boom, use of, on, March, p. 21.
Specialized shops in, advantages of, Oct., p. 64.
Special section, Oct, p. 45.
Telescope, application of, to, Dec., p. 40.

Itemized Index

January to December, 1936

Key: Edit, Editorial Pages; Adv, Advertising Pages; R, Right hand column; L, Left hand column

Design Calculations:

Bearings,
deformation of, June, Edit. 43, 44, 45
load capacities, Jan., Edit. 45L, 46
plain, April, Edit. 37, 38, 39, 81L
roller and ball, ratings of, July, Edit. 36, 37, 38
Cam curves, Aug., Edit. 36, 37, 38L
Cams, parabolic, Feb., Edit. 39, 40
Engine horsepower, June, Edit. 51
Frame stresses, Jan., Edit. 30, 31, 32, 33
Gears,
elliptical, Sept., Edit. 42, 43
strength of, July, Edit. 39, 40, 41L
tooth form of, Nov., Edit. 47, 48, 49
Hard surfacing, Oct., Edit. 58, 59, 62
Material length, Nov., Edit. 57L, 58L
Radius of gyration, Aug., Edit. 46, 47L
Springs,
beryllium, May, Edit. 32, 33
disk type, June, Edit. 40, 41, 42
helical, Feb., Edit. 19, 20, 21, 22, 23
surge frequency, Jan., Edit. 47
Velocities, Feb., Edit. 45
Yoke arms, Nov., Edit. 43, 44

Design Problems:

Abrasive action, withstanding, March, Edit. 19; April, Edit. 40, 41R, 42L
Adjustments, assuring exact, Nov., Edit. 34, 35, 36
Aluminum,
applying alloys of, March, Edit. 26R, 34, 35, 36
extruded sections, applying, Feb., Edit. 33, 40R
Appearance, improving, Aug., Edit. 21, 22; Oct., Edit. 71, 73; Nov., Edit. 40, 41
Arc welding, applying, Oct., Edit. 50R, 53, 54, 63, 65, 69, 71, 73
Automatic mechanisms, developing, Dec., Edit. 23, 24, 25, 26, 27
Automobiles, improving, Feb., Edit. 38
Bearings,
ball and roller, comparing strengths of, July, Edit. 36, 37, 38
deformation of, preventing, June, Edit. 43, 44, 45
phenolic plastic, specifying, Sept., Edit. 34, 35, 36, 37; Oct., Edit. 38, 39, 40
plain type,
determining load capacities of, Jan., Edit. 45L, 46; March, Edit. 79, 96R, 98R
specifying, April, Edit. 37, 38, 39, 81L
securing precise control with, Dec., Edit. 37, 38, 39, 40
Beryllium, applying, May, Edit. 31, 32, 33, 85R
Bimetal elements, employing, June, Edit. 35, 36, 60R
Bushings, building composite; Nov., Edit. 31
Calculations, solving mechanically, Oct., Edit. 38, 39, 40
Cams,
developing, Feb., Edit. 39, 40; May, Edit. 43, 44
developing uniform acceleration, Aug., Edit. 36, 37, 38L
Castings, reinforcing, Sept., Edit. 29, 30, 31, 32
Castings and welding, combining, May, Edit. 37, 80R
Centrifugal force, utilizing, March, Edit. 25, 26, 27
Clad metals, uses of, Oct., Edit. 26R, 48
Coins, controlling with, Aug., Edit. 21, 22, 23, 24, 25
Controls, developing radio, Dec., Edit. 23, 24, 25, 26, 27
Copper alloys, applying, March, Edit. 26
Cord sets, choosing correct, Aug., Edit. 31, 32, 73L
Corrosion, obviating, Dec., Edit. 34, 35, 36
Corrosion, overcoming, Sept., Edit. 33, 76R
Developments, determining action of, April, Edit. 28R, 29
Die castings,
combining with plastics, March, Edit. 20, 35L, 113L
specifying, March, Edit. 19, 34, 35, 36
Drawings, standardizing, June, Edit. 39
Electrical controls,
applying, Feb., Edit. 31, 32, 40; June, Edit. 30, 31, 32, 33, 34; Aug., Edit. 39, 40, 41
combining with hydraulic, Feb., Edit. 27, 28, 29, 30; May, Edit. 29L; July, Edit. 26
Fabrication, choosing procedure for, Oct., Edit. 49, 63, 65, 69
Fatigue,
limits of, determining, July, Edit. 32, 33, 34
overcoming, Jan., Edit. 37, 38, 39, 40
reducing, for operator, Nov., Edit. 27, 28L, 29R
Filters, applying oil, July, Edit. 28, 29, 30, 31, 73L
Frames, selecting style of, Jan., Edit. 30, 31, 32, 33
Gas welding, applying, Oct., Edit. 55, 56, 57, 74R
Gears,
applying hypoid and spiral bevel, Nov., Edit. 28L
determining profile of, Nov., Edit. 47, 48, 49
developing silent, Oct., Edit. 42, 43, 44L
elliptical, specifying, Sept., Edit. 42, 43
noise of, reducing, June, Edit. 37, 38
strength of, calculating, July, Edit. 39, 40, 41L
Hard surfacing, applying, Oct., Edit. 26, 34R, 48, 58, 59, 62
Hardening, specifying exact, Oct., Edit. 26L, 55, 56L, 57
Hydraulics,
combining with electrical units, Feb., Edit. 27, 28, 29, 30; May, Edit. 29L; July, Edit. 26
Impact extrusion, utilizing, Feb., Edit. 33, 40R
Interchangeability, insuring, July, Edit. 22L
Inventions, protecting rights to, Dec., Edit. 30, 31, 32, 33
Iron alloys, importance of, March, Edit. 27
Lights, building in, Jan., Edit. 34, 35, 36; Feb., Edit. 44R, 45L; April, Edit. 49
Machine range, widening, May, Edit. 41, 42
Machine tools, improving, Nov., Edit. 37, 38, 39
Machine uses, multiplying, Dec., Edit. 29
Machinery, controlling, electrically, Aug., Edit. 39, 40, 41
Machining, eliminating, Jan., Edit. 23L
Magnesium alloys, applying, March, Edit. 34, 35, 36
Massive equipment, supporting, Dec., Edit. 37, 38, 39, 40
Material levels, controlling, June, Edit. 27R, 28L
Materials,
joining dissimilar, Sept., Edit. 28
selecting proper, Aug., Edit. 33, 34, 35
utilizing composite, Oct., Edit. 47, 48, 49
utilizing special, March, Edit. 22, 23, 24, 25, 26; April, Edit. 40, 41, 42, 43
Mechanisms,
reducing number of, Oct., Edit. 32
determining patentability of, June, Edit. 23, 24, 25, 26, 84R
Metals, anticipating developments in, March, Edit. 15, 16, 17, 18, 111L
Minute accuracy, obtaining, July, Edit. 21, 22, 23, 24, 50R
Motions, securing complex, May, Edit. 23, 24, 25, 26, 27, 90R
New models, complete redesign of, Nov., Edit. 40, 41, 42
Noise, eliminating, May, Edit. 30; June, Edit. 37, 38; Oct., Edit. 42, 43, 44L; Dec., Edit. 41, 42, 43, 75L
Oil, insuring cleanliness of, July, Edit. 28, 29, 30, 31, 73L
Operating flexibility, securing, June, Edit. 30, 31, 32, 33, 34
Operations, simplifying, Feb., Edit. 25

Parts, reducing number of, Feb., Edit. 31, 32
 Patent interference, obviating, Dec., Edit. 30, 31, 32, 33
 Patents, securing protection with, Sept., Edit. 38, 39, 40, 41,
 Peak loads, providing for, Feb., Edit. 24, 25L
 Phenolic plastic bearings, applying, Sept., Edit. 34, 35, 36, 37;
 Oct., Edit. 35, 36, 37
 Plastics, adapting designs for, March, Edit. 28, 29, 30, 31, 32,
 33, 112R, 113L
 Pneumatic devices, utilizing, May, Edit. 29
 Propellers, regulating pitch of, Oct., Edit. 41, 107L
 Pumps,
 air type, applying, April, Edit. 31, 32, 33, 82R
 liquid type, applying, May, Edit. 38, 39, 40, 82R, 83L, 84R
 Quiet operation, insuring, Dec., Edit. 41, 42, 43, 75L
 Radios, simplifying operation of, Dec., Edit. 23, 24, 25, 26, 27
 Reels, determining length of material on, Nov., Edit. 57R, 58L
 Rigidity assuring, Sept., Edit. 29, 30, 31, 32
 Rolled steel, adapting for, Oct., Edit. 51R, 53, 54, 69R, 71, 73
 Rotating disks, cooling, June, Edit. 56R, 58R
 Rubber, applying synthetic, Jan., Edit. 26, 27, 28, 29
 Safety,
 insuring, April, Edit. 29
 insuring, in cars, Nov., Edit. 27, 28L, 39R
 Seals, perfecting flexible, Nov., Edit. 32
 Sealing, insuring adequate, Sept., Edit. 23, 24, 58R
 Shafting, reducing stresses in, May, Edit. 34, 35, 36
 Shapes, producing intricate, Oct., Edit. 56, 57
 Shims, applying, Nov., Edit. 34, 35, 36
 Shrink fits, calculating effects of, June, Edit. 43, 44, 45
 Size, reducing, Jan., Edit. 19, 20, 21, 22
 Special materials, employing, Dec., Edit. 34, 35, 36
 Special units, avoiding, Nov., Edit. 37, 38, 39
 Speeds, insuring proper, June, Edit. 27
 Spot welding, employing, Oct., Edit. 50R
 Springs,
 beryllium type, developing, May, Edit. 31, 32, 33, 85L
 disk type, specifying, June, Edit. 40, 41, 42
 helical type, specifying, Feb., Edit. 19, 20, 21, 22, 23; April,
 Edit. 49R, 50, 51L
 overcoming problems in, Nov., Edit. 54
 surge frequency, determining, Jan., Edit. 47
 Stainless steels, specifying, March, Edit. 37, 38
 Standard procedure, developing, Oct., Edit. 29, 30, 31
 Steel alloys, applying, March, Edit. 22, 23, 24, 25, 26
 Steels,
 protecting, Nov., Edit. 45
 selecting for gears, July, Edit. 34, 40, 41L
 Stresses,
 concentration of, eliminating, Jan., Edit. 37, 38, 39, 40; Feb.,
 Edit. 34, 35, 36, 37
 localized, reducing, May, Edit. 34, 35, 36
 Temperature, controlling by, June, Edit. 35, 36, 60R
 Tension, maintaining uniform, Oct., Edit. 88R, 90R
 Undercutting, reducing in gears, Nov., Edit. 47, 48, 49
 Uniform pressure, developing, June, Edit. 29R
 Velocities, determining, Feb., Edit. 44
 Vernier operation, securing, Dec., Edit. 26R, 27
 Vibration, combatting, April, Edit. 34, 35, 36, 43, 79L
 Wear, anticipating, Nov., Edit. 34, 35, 36
 Weight,
 integrating, May, Edit. 28, 29L
 reducing, Jan., Edit. 19, 20, 21, 22; July, Edit. 35, 71L, 72R
 Welding, designing for, July, Edit. 35, 71L, 72R; Oct., Edit. 47,
 48, 49, 50, 51, 52, 53, 54, 55, 56L, 59R, 63, 65, 69, 71, 73, 74R
 Welding, specifying, Nov., Edit. 46
 Yoke-type members, developing, Nov., Edit. 43, 44
 Zinc alloys, applying, March, Edit. 34, 35, 36

Finishes:

Asphalt paint, March, Edit. 26L
 Copper plate solution, Aug., Edit. 64R, 66R
 Corrosion resisting, Sept., Edit. 60R, 62R
 Electrodeposited, Jan., Edit. 74R; Sept., Edit. 27R, 28; Oct.,
 Edit. 48R; Nov., Edit. 30L, 45
 Enamels, Jan., Adv. 56L; Sept., Edit. 66R, 68R, 70R

Heat resisting, June, Edit. 78R, 79L
 Paints and varnishes, Feb., Adv. 16; April, Edit. 44; Adv. 81R;
 July, Adv. 19
 Primers, April, Edit. 75L
 Protective coating, June, Edit. 62L

Materials:

All types of materials used in the design of machinery are included in the alloy directory, March, Edit. 43-78
 Alloys (Hard-Facing), March, Edit. 19L, 20L; April, Edit. 42L;
 Oct., Edit. 26R, 34R, 48, 58, 59, 62
 Alloys (Iron), March, Edit. 18R, 27; Oct., Edit. 56L
 Alloys (Nickel), Jan., Adv. 55; Feb., Edit. 21, 22L, 37; Adv.
 59, 60; March, Edit. 16R, 17L, 19L, 25L, 26; Adv. 62; April,
 Edit. 40R, 43L; Adv. 55; May, Adv. 61; June, Edit. 36L;
 Adv. 61, 76L; July, Edit. 24R; Adv. 57, 68L; Aug., Adv. 55;
 Sept., Adv. 65; Oct., Edit. 50R, 51L, 65L; Adv. 22, 68; Nov.,
 Edit. 92R; Adv. 79; Dec., Edit. 36R; Adv. 14
 Alloys (Steel), Jan., Edit. 69L, 70L; Feb., Edit. 21, 22L, 27,
 32R, 37; Adv. 53; March, Edit. 16, 17, 23R, 24, 25, 26, 37, 38;
 Adv. 56, 64, 68; April, Edit. 40R, 42, 43L; May, Edit. 20R;
 Adv. 55; June, Edit. 68R; Adv. 73; July, Edit. 71L, 72R;
 Adv. 12, 13, 16, 61; Aug., Edit. 22R, 34L; Adv. 61; Sept.,
 Edit. 28L; Adv. 8, 9; Oct., Edit. 52L, 56L, 65L, 74R, 103L;
 Adv. 8, 9, 17, 72; Nov., Edit. 30L; Adv. 10, 11, 89; Dec.,
 Edit. 36, 64R; Adv. 53
 Aluminum, Jan., Edit. 20R, 21R, 22L; Feb., Edit. 33, 37, 40R;
 March, Edit. 16R, 17L, 18, 26L, 27R, 28, 34, 35, 36; April,
 Edit. 42; June, Edit. 33R, 60R; Oct., Edit. 74R; Nov., Edit.
 30L, 57R; Dec., Edit. 24R, 35
 Babbitt, Dec., Edit. 38R
 Beryllium, March, Edit. 18R, 28R; May, Edit. 31, 32, 33, 85R
 Bimetals, March, Edit. 90R, 92R; June, Edit. 35, 36, 60R; Dec.,
 Edit. 28R, 29L
 Bronze, Sept., Edit. 24R; Oct., Edit. 47L, 65; Adv. 82L
 Cadmium, March, Edit. 18L
 Copper and copper alloys, Feb., Edit. 21, 22L, 37; March, Edit.
 16L, 17R, 18, 19L, 26R, 43L; Adv. 70L, 72L; April, Edit. 37R,
 40R, 42R; June, Edit. 36L, 60R; July, Edit. 24L; Adv. 20;
 Aug., Edit. 58R, 60R; Sept., Edit. 24; Oct., Edit. 37R, 73R;
 Nov., Edit. 31L
 Cork, Jan., Edit. 28R, 29L; April, Edit. 43R; Sept., Edit. 24
 Felt, Jan., Adv. 15, 72L; Feb., Adv. 66L, 74L; March, Adv.
 70R; April, Edit. 27L, 34, 35, 36; Adv. 59, 84L; May, Adv.
 82L, 84L; June, Adv. 76L; July, Adv. 64L, 78L; Aug., Adv. 72L;
 Sept., Adv. 66L, 78L; Oct., Adv. 115L; Dec., Adv. 81L
 Fiber, Feb., Adv. 68L; March, Adv. 72R; June, Adv. 78L; Aug.,
 Adv. 64L; Oct., Adv. 112L; Dec., Adv. 82L
 Glass, Jan., Edit. 40R; Nov., Edit. 92R
 Iron, March, Edit. 18R; April, Edit. 41R; Aug., Edit. 18; Dec.,
 Edit. 35R, 36L
 Jewels, July, Edit. 50R
 Lead, March, Edit. 18R
 Magnesium, March, Edit. 27R, 28, 34, 35, 36; July, Adv. 20;
 Nov., Edit. 40L, 58R; Adv. 75, 80L
 Molybdenum, Jan., Adv. 14; Feb., Adv. 55; March, Edit. 16R,
 17, 24R, 25L; Adv. 66; April, Adv. 13; May, Adv. 67; June,
 Adv. 12; July, Adv. 53; Aug., Edit. 35; Adv. 14; Sept., Adv.
 51; Oct., Adv. 24; Nov., Adv. 16; Dec., Adv. 18
 Plastics, Jan., Edit. 22R, 74R; Adv. 70L; Feb., Edit. 74R; Adv.
 66L; March, Edit. 29, 30, 31, 32, 33, 112R, 113L; Adv. 60,
 70R, 77, 78; April, Edit. 37R, 56, 74R; Adv. 78L; May, Edit.
 70R, 72R; Adv. 88L; June, Adv. 86L; July, Adv. 68L; Aug.,
 Adv. 79; Sept., Edit. 24R, 26, 27R, 34, 35, 36, 37; Adv. 82;
 Oct., Edit. 35, 36, 37, 102R; Adv. 109; Nov., Edit. 58R; Adv.
 95; Dec., Edit. 63L; Adv. 74
 Rubber, Jan., Edit. 24R, 25, 26, 27, 28, 29; Feb., Edit. 32R,
 March, Edit. 19R, 20R, 21, 26R, 28R; April, Edit. 27L, 29,
 43R; Oct., Edit. 26L; Nov., Edit. 29R, 44R
 Steel, Jan., Edit. 38R, 39R, 40; Feb., Edit. 35, 36, 37; March,
 Edit. 16R, 21, 23R, 24L; April, Adv. 15; June, Edit. 65L;
 Adv. 10; July, Edit. 34, 39, 40, 41L; Oct., Edit. 53, 54, 69R,
 71, 73; Nov., Edit. 30L, 31
 Steel (Alloy-Clad), March, Edit. 18L; Oct., Edit. 36R, 48; Adv.
 8, 9, 84L
 Tungsten, Feb., Edit. 22L, 23L

Wood, Aug., Edit. 22R
Zinc, Jan., Adv. 51; March, Edit. 34, 35, 36; Adv. 76; May, Adv. 63; June, Edit. 36L; July, Adv. 82; Sept., Adv. 19, 69; Oct., Edit. 32R, 33L; Nov., Adv. 69; Dec., Edit. 35R

Mechanisms:

Abrading, July, Edit. 48, 50L
Adjusting, Nov., Edit. 42; Dec., Edit. 23, 24, 25, 26, 27
Alarm, April, Edit. 60R, 62R
Balance wheel, July, Edit. 23R, 24L
Braking, June, Edit. 33R; Oct., Edit. 32
Bellerank, Nov., Edit. 42R
Calculating, Oct., Edit. 38, 39, 40
Cam, Jan., Edit. 45; Feb., Edit. 25R, 26L, 39, 40; May, Edit. 24, 25, 29, 43, 44; Aug., Edit. 23, 24, 36, 37, 38L; Nov., Edit. 42R
Cam and lever, Oct., Edit. 38, 39, 40
Casting, March, Edit. 92R, 94R; June, Edit. 29R
Clamping, Feb., Edit. 50R, 52R; June, Edit. 50, 51L
Clutch, July, Edit. 52R, 54R; Aug., Edit. 34, 35; Nov., Edit. 59
Coin, Aug., Edit. 23, 24, 25
Compensating, May, Edit. 64R
Contracting, Jan., Edit. 23
Controlling, March, Edit. 90R, 92R; June, Edit. 27R, 28L; Dec., Edit. 56R, 58R
Converting, Nov., Edit. 41
Conveying, Jan., Edit. 24R, 25L; May, Edit. 29R, 30L; Sept., Edit. 23, 24, 58R; Oct., Edit. 33
Counterweight, Oct., Edit. 41, 107L
Crank, May, Edit. 24L, 26L
Crankarm, Dec., Edit. 26L
Cutting, Jan., Edit. 58R, 60R
Dampening, Sept., Edit. 54R, 56R
Dial, Dec., Edit. 24, 25, 26L
Discharging, Feb., Edit. 28, 29, 30
Doffing, May, Edit. 66R, 68R
Driving, Feb., Edit. 24R, 25L, 56R; April, Edit. 28, 58R; July, Edit. 54R, 56R; Sept., Edit. 42, 43; Oct., Edit. 32, 82R, 84R, 88R, 90R
Escapement, July, Edit. 23R
Feeding, Jan., Edit. 60R, 62R; May, Edit. 90R; Oct., Edit. 33R
Geneva, May, Edit. 26
Gimbal, Dec., Edit. 39
Governing, Nov., Edit. 31R, 32L, 44R
Grinding, March, Edit. 19
Gyroscopic, June, Edit. 20L
Indexing, Feb., Edit. 52R, 54R
Indicating, Feb., Edit. 56R; May, Edit. 64R, 66R; Dec., Edit. 28, 29L
Inspecting, Aug., Edit. 27R, 28L
Integrating, May, Edit. 28
Intermittent, May, Edit. 26
Lever, Jan., Edit. 20, 21L
Measuring, Jan., Edit. 23R, 24L
Overdrive, Nov., Edit. 30R
Over-running, June, Edit. 28R
Paddle wheel, Aug., Edit. 50R, 52R
Pendulum, Sept., Edit. 26R, 27L
Planetary, Dec., Edit. 27L
Pneumatic, Jan., Edit. 25R; May, Edit. 29; June, Edit. 29; Sept., Edit. 27
Power take-off, Dec., Edit. 29
Printing, April, Edit. 56, 58R
Pumping, Sept., Edit. 52
Reciprocating, Feb., Edit. 26; Aug., Edit. 47; Oct., Edit. 84R
Refrigerating, Sept., Edit. 23, 24, 58R
Sealing, Sept., Edit. 23, 24, 58R
Selector, Aug., Edit. 24R, 25
Shifting, June, Edit. 34R; Nov., Edit. 30R
Slicing, Nov., Edit. 60
Slide, Jan., Edit. 24; May, Edit. 49
Solenoid, June, Edit. 30L, 34, 36R; July, Edit. 26R; Aug., Edit. 50; Nov., Edit. 60
Speed controlling, Oct., Edit. 41, 107L
Stabilizing, Nov., Edit. 29R
Steering, Nov., Edit. 30L

Stranding, May, Edit. 62R, 64R
Suspension, March, Edit. 20R, 21L
Take-up, March, Edit. 94R; June, Edit. 30L, 34
Tensioning, May, Edit. 27, 90R; Oct., Edit. 88R, 90R
Tongs, Aug., Edit. 27
Torque converting, July, Edit. 25R, 26L
Turning, Oct., Edit. 92R, 94R
Ventilating, Nov., Edit. 32R, 33L; Dec., Edit. 58R, 60R
Vernier, Dec., Edit. 26R, 27
Vibrating, Sept., Edit. 28R, 54R, 56R; Oct., Edit. 34
Walking beam, Sept., Edit. 25R, 26L
Weighing, Jan., Edit. 20, 21, 22
Yoke, Nov., Edit. 43, 44L

Organization and Equipment:

Blueprinters, Jan., Edit. 76R; Feb., Edit. 75L, 76R; March, Adv. 113R, 118L; April, Adv. 60L, 72L; May, Adv. 52L, 64L, 76L; June, Adv. 81R; July, Adv. 73R; Aug., Edit. 68R; Sept., Adv. 17, 81R; Nov., Edit. 24; Adv. 68L; Dec., Edit. 72R, 73L
Books and study courses, Oct., Adv. 94L, 114L; Dec., Adv. 60L
Curves, Oct., Edit. 104R, 105L
Drafting machines, Oct., Edit. 104R; Adv. 90L
Drawings, simplifying filing of, Aug., Edit. 28, 29, 30
Light, Sept., Edit. 73L; Oct., Edit. 105L
Machine motions, charting, May, Edit. 25R
Patent law and patent activity, June, Edit. 23, 24, 25, 26, 45R, 84R; Sept., Edit. 38, 39, 40, 41, 77L; Adv. 56L
Pencils, papers, instruments, inks, Jan., Adv. 13, 83; Feb., Adv. 75R; March, Edit. 109L; Adv. 9, 12; April, Adv. 14; June, Adv. 11, 70L; Aug., Edit. 70R, 71L; Adv. 11, 58L; Oct., Adv. 13; Dec., Adv. 11, 54L
Standards books, compiling, Oct., Edit. 29, 30, 31
Standards sheets, June, Edit. 39
Testing equipment, Jan., Edit. 75L, 76R; Feb., Edit. 74R, 75L; March, Edit. 105L; Adv. 84L; May, Adv. 56L; June, Edit. 79L; Oct., Adv. 111R; Nov., Edit. 78R
Welderies, employment of, Oct., Edit. 63, 65, 69

Parts:

Bars, Dec., Adv. 10
Bases, Feb., Edit. 64R, 66R; March, Edit. 100R; Aug., Edit. 56R; Nov., Edit. 60R
Bearings,
ball, Jan., Edit. 68R, 69L; Adv. 6, 49, 52L, 63; Feb., Adv. 6, 49, 50L, 57; March, Adv. 6, 81, 82L; April, Edit. 68R, 70R; Adv. 8, 53, 57, 86L; May, 70R, 82R; Adv. 6, 14, 19, 53; June, Edit. 38, 43, 44, 45, 74R, 76R; Adv. 6, 54L, 57, 82L, 91; July, Edit. 36, 37, 38, 60R, 62R; Adv. 49, 52L; Aug., Edit. 47R, 56R, 58R; Adv. 6, 15, 51, 67, 68L; Sept., Adv. 6, 49, 54L, 67; Oct., Edit. 86R, 96R, 97L; Adv. 14, 79, 80L; Nov., Edit. 35L, 36; Adv. 6, 8, 9, 87, 93; Dec., Adv. 52L, 69
needle, Feb., Edit. 25R, 26L; May, Adv. 78L
oil pad, Dec., Edit. 37, 38, 39, 40
phenolic plastic, Sept., Edit. 34, 35, 36, 37; Oct., Edit. 35, 36, 37
pillow blocks, Feb., Adv. 73R; March, Adv. 101, 105R; May, Edit. 77L, 78R; Aug., Adv. 3; Sept., Edit. 25; Adv. 22; Dec., Adv. 49
plain, Jan., Edit. 21, 24, 45L, 46; Feb., Edit. 28R; Adv. 54L; March, Edit. 18L, 25R; Adv. 70L; April, Edit. 37, 38, 39, 42R, 58R, 60R, 81L; Adv. 62L; June, Edit. 33R, 38, 43, 44, 45; Adv. 60L; July, Edit. 23; Oct., Adv. 100L; Nov., Edit. 31, 74R, 76R
roller, Jan., Adv. 52L, 59, 67R; Feb., Adv. 50L, 57, 86; March, Adv. 10, 82L, 93, 106L; April, Edit. 26R, 27L; Adv. 8, 61, 75R, 78L, 86L, 92; May, Edit. 80R, 81L, 82R; Adv. 54L, 65, 73R; June, Edit. 38, 43, 44, 45; Adv. 57, 65R, 94; July, Edit. 36, 37, 38, 60R, 62R; Adv. 63, 65, 71R; Aug., Adv. 71R, 84; Sept., Adv. 53, 54L, 59; Oct., Edit. 86R, 98R, 99L; Adv. 14, 25, 80L, 120; Nov., Adv. 19, 61, 83, 91; Dec., Edit. 29R; Adv. 13, 88
thrust, Jan., Adv. 76L; March, Adv. 82L; July, Adv. 76L; Sept., Adv. 68L; Oct., Adv. 85, 110L; Nov., Adv. 84L

Bellows, Sept., Edit. 52R, 54R; Nov., Edit. 32
 Blowers, June, Adv. 80L
 Brakes, May, Edit. 73L, 74R; June, Edit. 33; Oct., Edit. 2, 32, 97L, 98R; Dec., Edit. 65L, 66R
 Cable, Feb., Edit. 30R, 74R; June, Edit. 62R, 65L; Sept., Edit. 71L; Dec., Edit. 71L; Adv. 65R
 Cam followers, Feb., Edit. 25R, 26L
 Cams, Feb., Edit. 39, 40; May, Edit. 43, 44; Aug., Edit. 34, 36, 37, 38L; Nov., Edit. 42R
 Cast Parts,
 die castings, March, Edit. 16R, 19, 34, 35, 36; Oct., Edit. 32R, 33L; Nov., Edit. 58R; Dec., Edit. 62R
 iron, March, Edit. 18R; Adv. 62; April, Edit. 41R; Aug., Edit. 18L; Sept., Edit. 29, 30, 31, 32; Oct., Edit. 52L, 74R
 nonferrous, March, Edit. 26; April, Edit. 42R
 steel, March, Edit. 23R, 24L, 26, 38; April, Edit. 26R; May, 37R, 80R; July, Edit. 71L, 72R; Oct., Edit. 51R
 Clutches,
 magnetic, May, Edit. 73L, 74R; Adv. 92; Aug., Edit. 34, 35; Adv. 68L; Nov., Edit. 59
 mechanical, Jan., Adv. 71R, 72L; Feb., Adv. 76L; March, Adv. 107R, 114L; April, Adv. 74L, 82L; May, Adv. 83R; June, Adv. 72L; July, Edit. 26L; Adv. 62L; Oct., Edit. 33; Adv. 102L, 117; Dec., Edit. 29R, 70R, 71L; Adv. 19, 71L, 83L
 over-running, Jan., Adv. 68L; Feb., Adv. 72L; March, Adv. 108L; July, Edit. 52R, 54R; Oct., Adv. 113L; Nov., Edit. 30R; Adv. 96L
 Connectors, July, Edit. 66R
 Controllers, March, Edit. 106R, 107L, 120; April, Edit. 77L; June, Edit. 72R; Sept., Edit. 24R
 Controls Electrical,
 circuit breakers, Aug., Edit. 54R, 56R
 contactors, Oct., Adv. 98L
 general, Oct., Adv. 95R; Dec., Edit. 63L, 64R
 lights, Dec., Adv. 63R
 limit switches, April, Adv. 64L
 mercury switches, Jan., Adv. 12; Feb., Adv. 51; March, Edit. 100R, 102R; Adv. 91; April, Adv. 90; May, Adv. 57; June, Edit. 28L; Adv. 75; Oct., Edit. 96R; Adv. 20; Nov., Adv. 81; Dec., Edit. 67L, 68R
 micro switch, Dec., Edit. 66R, 67L
 motor controls, Jan., Adv. 84; Feb., Edit. 31, 32; March, Adv. 2; June, Edit. 30, 31, 32, 33, 34; July, Adv. 3, 84; Dec., Adv. 2
 protective devices, Feb., Edit. 68R, 70R; April, Adv. 69; May, Edit. 76R, 77L
 pushbuttons, June, Edit. 32; Aug., Edit. 41; Oct., Edit. 32; Nov., Edit. 33
 radio, Dec., Edit. 23, 24, 25, 26, 27
 regulators, March, Edit. 108R, 109L
 relays, March, Edit. 105L, 106R; Sept., Edit. 68R, 70R
 solenoids, Jan., Edit. 64R, 66R; June, Edit. 30, 33L; July, Edit. 26R; Sept., Edit. 70R, 71L; Nov., Edit. 30R
 starters, Jan., Adv. 2; April, Adv. 10, 11; May, Adv. 3, 10, 11; June, Edit. 62; Adv. 13; July, Adv. 15; Aug., Adv. 2; Sept., Adv. 63; Oct., Adv. 19; Nov., Edit. 62R, 64R, 66R, 68R, 70R, 72R; Adv. 3; Dec., Adv. 64L
 switches, Jan., Edit. 23R, 64R, 66R, 69L; Feb., Edit. 29R, 30, 31, 32, 64R, 72R, 73L; April, Adv. 2; May, Edit. 72R, 73L, 77L; June, Edit. 32, 33, 34, 78R; Adv. 2, 79R; July, Edit. 26; Aug., Edit. 23, 24, 25, 39, 40, 60R; Adv. 16; Sept., Edit. 28R; Adv. 3, 88; Oct., Adv. 103R; Nov., Edit. 76R, 78R; Adv. 100; Dec., Adv. 58L
 telemetry system, Dec., Edit. 28
 timers, April, Edit. 72R, 74L; Aug., Edit. 62R; Adv. 12; Sept., Edit. 27R; Adv. 75R; Oct., Edit. 34R, 102R, 103R; Adv. 115R
 Conveyors, Jan., Edit. 24R, 25L; March, Edit. 107L; Adv. 116L; April, Edit. 26R, 27; May, Edit. 29R, 30L; June, Edit. 74R, 76R; July, Edit. 26L, 58R, 60R; Aug., Edit. 28L; Sept., Edit. 23R, 24L, 58R; Oct., Edit. 33
 Counters, Feb., Adv. 9; March, Adv. 95; April, Adv. 24, 64L; May, Adv. 69; June, Adv. 55, 79R; July, Adv. 51; Aug., Adv. 53, 75R; Sept., Adv. 18; Oct., Adv. 91, 103R; Nov., Adv. 98; Dec., Adv. 25
 Couplings, Jan., Adv. 74L; Feb., Edit. 54R, 56R; March, Adv. 112L; April, Edit. 66R, 68R; May, Adv. 72L, 78L; June, Edit. 28R, 38R, 65L, 66R; July, Edit. 62R; Adv. 74L; Aug., Edit. 58R; Sept., Adv. 72L; Nov., Edit. 28L, 59L; Adv. 82L, 88L
 Drives,
 See also under *Hydraulic Equipment*.
 chain, Jan., Adv. 9; Feb., Adv. 15, 48L; March, Adv. 3, 85, 111R; April, Edit. 27; Adv. 71, 77R; May, Edit. 40; Adv. 71, 79R, 85R; June, Adv. 17, 21, 89R; July, Adv. 54L; Aug., Edit. 18R; Adv. 57; Sept., Adv. 12, 13, 55, 60L; Oct., Edit. 33, 99L; Adv. 10, 11, 89; Nov., Adv. 13, 14, 15, 17; Dec., flat belts, Jan., Edit. 29R; May, Edit. 40; July, Edit. 54R, 56R; Dec., Edit. 71L, 72R
 friction, April, Edit. 58R; July, Edit. 25R, 26L
 gearsets, Jan., Edit. 67L, 68R; Adv. 73R; Feb., Edit. 24; Adv. 12, 67, 80; March, Adv. 88L, 96L, 99; April, Adv. 18; May, Edit. 72R, 78R; Adv. 2, 75R, 86, 91; June, Adv. 67, 82L; July, Adv. 56L; Aug., Edit. 57; Sept., Edit. 64; Oct., Edit. 32, 33, 39, 71; Adv. 12, 81; Nov., Edit. 47, 48, 49; Adv. 13, 72L; Dec., Adv. 57, 87
 motorized reducers, Jan., Edit. 70R; Adv. 57; Feb., Edit. 62R, 64R; April, Adv. 9, 72L; May, Adv. 82L; June, Adv. 84L, 93; Aug., Edit. 41R; Adv. 81L, 83; Sept., Edit. 60R; Adv. 70L, 80; Oct., Adv. 15, 104L, 119; Nov., Adv. 13, 90L; Dec., Adv. 9, 15, 79R
 turbine, Nov., Edit. 72R, 74R
 variable speed, Jan., Edit. 74R; Adv. 3, 17; Feb., Adv. 15, 81; March, Adv. 13; April, Edit. 64R, 66R; Adv. 6, 23; May, Edit. 29R; Adv. 21; June, Edit. 72R, 74R; Adv. 63, 64; July, Edit. 68R; Adv. 6; Aug., Adv. 19, 57; Sept., Adv. 21; Oct., Adv. 6, 16, 27; Nov., Edit. 68R; Adv. 25
 V-belts, Jan., Edit. 29R, 75L; Feb., Edit. 24; Adv. 11; April, Adv. 3; June, Edit. 27; Sept., Edit. 71L, 72R
 Electrical accessories, Feb., Adv. 65; April, Adv. 12; May, Edit. 75L, 76R; June, Adv. 53; Aug., Edit. 31, 32, 64R, 73L; Adv. 65; Oct., Adv. 87; Nov., Edit. 62L, 70R; Dec., Adv. 16
 Electronic equipment, July, Edit. 27; Aug., Edit. 66R, 68R; Oct., Edit. 26R
 Fastenings,
 keys, Oct., Edit. 37R
 nuts, April, Edit. 76R, 77L; June, Adv. 3
 screws, Jan., Adv. 66L; Feb., Adv. 68L; April, Adv. 88L; May, Adv. 74L; June, Adv. 58L; July, Edit. 24; Adv. 79R; Aug., Adv. 52L; Sept., Adv. 62L; Oct., Adv. 86L; Nov., Adv. 70L; Dec., Adv. 77
 washers, Jan., Adv. 60L; March, Adv. 14, 102L; April, Adv. 91; May, Adv. 18, 66L, 87R; June, Adv. 69; July, Adv. 2, 81, 83; Aug., Adv. 13; Sept., Adv. 2, 15; Oct., Adv. 28; Nov., Adv. 63, 71; Dec., Adv. 22
 Filters, July, Edit. 28, 29, 30, 31, 73L; Sept., Edit. 62R, 64R
 Flexible shafts, Oct., Edit. 34; Dec., Edit. 68R
 Forgings, Feb., Edit. 34; March, Edit. 38; Adv. 58; July, Adv. 67; Sept., Adv. 86; Oct., Adv. 113R; Nov., Adv. 97
 Gears, Jan., Edit. 60R, 62R; Adv. 16; Feb., Edit. 35, 36; Adv. 71; March, Adv. 74, 99, 114L, 117R, 119; April, Edit. 28; Adv. 20, 65; May, Edit. 26R, 27L, 37, 80R, 81L; Adv. 81R; June, Edit. 37, 38; Adv. 14, 67; July, Edit. 23R, 26L, 39, 40, 41L; Adv. 14, 66L, 78L; Aug., Adv. 62L, 82; Sept., Edit. 42, 43; Adv. 78L; Oct., 42, 43, 44L, 71R, 73L, 82R, 84R; Adv. 21, 83, 104L, 107R; Nov., Edit. 28L, 30, 34, 35L, 42R, 47, 48, 49; Dec., Edit. 26R, 27, 42R, 43; Adv. 62L, 80L, 86
 Heating units, Feb., Adv. 2; March, Edit. 104R; Aug., Edit. 28; Oct., Adv. 99L; Dec., Edit. 72R
 Hose, Jan., Edit. 27L, 28; May, Edit. 73L; July, Edit. 66R, 68R
 Hydraulic equipment, Jan., Edit. 23, 60R, 62R, 71L, 72R; Adv. 10, 11, 54L; Feb., Edit. 27, 29, 30; March, Edit. 102R, 104R; Adv. 3, 86L; May, Edit. 29L; June, Edit. 27, 70R, 72R; Adv. 22; July, Edit. 26; Oct., Edit. 41, 95L, 96R, 107L; Adv. 3; Dec., Edit. 56R, 58R; Adv. 3
 Instruments, March, Edit. 107L, 108R; April, Edit. 30; Aug., Edit. 41R; Sept., Edit. 25R, 26, 66R; Oct., Adv. 96R
 Lights, Jan., Edit. 34, 35, 36; Feb., Edit. 45R, 46L; April, Edit. 49, 75L, 76R; Sept., Edit. 73L; Oct., Edit. 105L
 Lubrication and lubricating equipment,
 design, Jan., Edit. 24; April, Edit. 37, 38, 39, 81L; May, Edit. 50R, 82R; June, Edit. 38R, 51; Sept., Edit. 25R, 26L; Oct., 15

- Edit. 36L, 37L; Dec., Edit. 38
 lubricants, Nov., Edit. 28L
 oilers, Jan., Edit. 73L, 74R; March, Edit. 109L; April, Edit. 70R, 72R; June, Adv. 80L; July, Adv. 74L; Aug., Edit. 66R; Adv. 70L; Oct., Adv. 111L
 systems, Jan., Edit. 70R, 71R; Feb., Adv. 77R, 79; April, Edit. 26R; Adv. 66L, 87; June, Adv. 68L; July, Edit. 28, 29, 30, 31, 73L; Aug., Adv. 78; Sept., Adv. 58L; Oct., Adv. 108; Nov., Edit. 64R; Adv. 94; Dec., Adv. 68L
Moldings, Sept., Edit. 68R
Motors,
See also under Drives, motorized reducers.
 adjustable speed, Jan., Adv. 79
 capacitor, June, Adv. 15
 fractional horsepower, Jan., Adv. 58L, 65, 82; Feb., Edit. 70R, 72R; Adv. 56L, 76L; March, Adv. 110L; April, Adv. 73, 85R; May, Adv. 13, 60L; June, 83R, 85R; July, Edit. 68R, 70R; Adv. 70L; Aug., Edit. 23, 24L; Adv. 66L; Sept., Adv. 79R; Oct., Edit. 103L; Adv. 97R; Dec., Adv. 12, 83R
 general, Jan., Adv. 18, 53, 66L, 69R; Feb., Edit. 24, 25L, 31, 32; Adv. 18, 52L, 83; March, Adv. 11, 83, 90L, 92L, 94L, 98L; April, Adv. 17, 58L, 68L, 80L, 83R; May, Edit. 41, 42; Adv. 9, 22, 58L, 59; July, Adv. 9, 10, 11, 17, 58L, 60L, 75R; Aug., Edit. 40L; Adv. 54L, 59, 63; Sept., Adv. 10, 11, 64L, 69, 73R, 77R, 83, 87; Oct., Edit. 88R, 90R, 99L, 100R; Adv. 23, 88L, 92L, 95R, 105R; Nov., Adv. 2, 18, 22, 23, 65, 67, 77, 78L, 99; Dec., Edit. 41, 42, 56R, 58R, 60R; Adv. 61, 63R, 71R, 75, 79R
 polyphase, Jan., Adv. 61; March, Adv. 97; June, Adv. 18; Aug., Adv. 77R; Sept., Adv. 61; Oct., Adv. 83; Dec., Adv. 55
 protected, Jan., Edit. 72R, 73L; April, Edit. 66R; June, Edit. 76R, 78R; July, Adv. 55; Sept., Edit. 72R, 73L
 repulsion start induction, April, Adv. 67; June, Adv. 88
 reversing, May, Edit. 28, 29L
 shell type, June, Edit. 31
 single phase, Feb., Edit. 66R, 68R; Adv. 63; June, Edit. 68R, 70R
 split-phase, Dec., Adv. 66L
 squirrel cage induction, March, Adv. 87; May, Adv. 17; Aug., Adv. 20; Oct., Edit. 100R, 102R; Dec., Adv. 17
 synchronous, May, Edit. 42
 universal, Feb., Adv. 10; Aug., Adv. 60L; Sept., Adv. 14; Oct., Adv. 110L
 wound rotor, Aug., Adv. 9
Nozzles, July, Edit. 64R
Packing glands and packing,
 gaskets, Jan., Edit. 29; March, Edit. 19R
 packings, Aug., Edit. 60R, 62R
 seal rings, Jan., Adv. 75R; March, Adv. 109R; April, Edit. 26R, 27L; May, Adv. 90L; July, Adv. 77R; Sept., Adv. 71R
 unit seals, Jan., Edit. 29; Adv. 4, 62L, 76L; Feb., Adv. 4, 14, 70L, 72L; March, Adv. 4, 89, 106L, 115; April, Adv. 4, 16, 21, 74L, 82L; May, Adv. 4, 16, 80L; June, Adv. 4, 16, 74L; July, Adv. 4, 80L; Aug., Adv. 4, 17, 76L; Sept., Adv. 4, 74L, 76L; Oct., Edit. 90R, 92R; Adv. 4, 101; Nov., Edit. 32, 36R; Adv. 4; Dec., Adv. 4, 51, 72L
Pipe, Aug., Edit. 28R
Plates, July, Edit. 70R; Oct., Edit. 53, 54, 69R, 71, 73
Pneumatic equipment, Sept., Edit. 27; Nov., Adv. 20
Plugs (Electrical), Oct., Adv. 87
Pulleys, July, Edit. 70R, 71L
Pumps,
 air, Jan., Adv. 78; Feb., Adv. 62L, 74L; March, Adv. 108L; April, Edit. 31, 32, 33, 82R; Adv. 80L, 84L; May, Adv. 72L; June, Adv. 80L, 86L; July, Edit. 64R, 66R; Adv. 70L; Aug., Adv. 66L; Sept., Adv. 76L; Oct., Adv. 102L, 111L; Nov., Adv. 86L; Dec., Adv. 78L, 83L
 hydraulic, (see also hydraulic equipment),
 Jan., Adv. 64L; Feb., Edit. 29; June, Adv. 84L; Sept., Adv. 84L; Nov., Adv. 88L; Dec., Adv. 81L
 liquid, Jan., Edit. 67L, 74R, 75L; Adv. 68L, 80L; Feb., Edit. 68R, 72R; Adv. 70L; March, Edit. 21; Adv. 74, 100L, 112L; April, Edit. 74R, 75L; Adv. 76L, 88L; May, Edit. 38, 39, 40, 82R, 83L, 84R; Adv. 74L, 80L, 88L; June, Adv. 74L, 78L, 80L, 90L; July, Edit. 58R; Adv. 64L, 72L, 80L; Aug., Adv. 62L, 70L, 72L, 74L, 80L; Sept., Edit. 24R, 25R, 26L, 52; Adv. 70L; Oct., Edit. 41, 107L; Adv. 104L, 106L, 113L, 116L; Nov., Edit. 64R, 66R; Adv. 82L, 92L; Dec., Edit. 38R; Adv. 70L, 72L, 82L, 84L
 motorized, Feb., Adv. 78L; July, Edit. 62R, 64R; Sept., Adv. 66L, 74L; Oct., Adv. 115; Dec., Edit. 43R
 packless, Jan., Edit. 28L, 29L
Shafting, July, Adv. 72L, 76L; Oct., Adv. 114L; Dec., Adv. 70L
Shapes, Feb., Adv. 82L; March, Edit. 38; April, Adv. 79R; May, Adv. 70L; June, Adv. 66L; Aug., Adv. 56L; Oct., Edit. 53, 54, 69R, 71, 73; Adv. 84L; Dec., Adv. 81R
Sheaves, June, Adv. 9
Sheets, Dec., Edit. 68R, 70R
Shims, Jan., Adv. 70L; Feb., Adv. 78L; March, Adv. 110L; May, Edit. 64R; Adv. 70L; June, Adv. 90L; July, Adv. 86L; Aug., Adv. 74L; Sept., Adv. 68L; Oct., Edit. 37; Adv. 106L; Nov., Edit. 34, 35, 36; Adv. 90L; Dec., Adv. 78L
Springs, Jan., Edit. 47; Feb., Edit. 19, 20, 21, 22, 23; March, Edit. 20R, 21L, 94R; Adv. 104L; April, Edit. 49R, 50, 51L, 60R, 62R; Adv. 76L; May, Edit. 31, 32, 33, 42R, 85R; Adv. 15; June, Edit. 33R, 40, 41, 42; Adv. 72L; July, Edit. 23R, 50L; Aug., Edit. 50; Adv. 64L; Sept., Edit. 25R; Oct., Edit. 84R, 107L; Adv. 112L; Nov., Edit. 42R, 54; Dec., Edit. 26R;
Tubing, Feb., Edit. 30, 62R; Adv. 3; June, Edit. 60R; Adv. 19 Aug., Adv. 10; Sept., Edit. 24R, 58R; Adv. 57; Oct., Edit. 26R; Adv. 118; Nov., Adv. 73
Universal joints, Nov., Edit. 28L
Valves, Jan., Edit. 25R, 26L, 29R; Feb., Edit. 29R, 30L, 50R, 52R; May, Edit. 30, 74R, 75L; June, Edit. 66R, 68R; Sept., Edit. 24R; Dec., Edit. 56R, 58R
Vibrators, March, Edit. 104R, 105L
Welded parts and equipment,
 design, Jan., Edit. 23L; Feb., Edit. 28L; Adv. 8; March, Edit. 16R, 17, 21R, 24R, 25L, 38R; Adv. 8; April, Adv. 19; May, Edit. 37, 80R; Adv. 59; June, Adv. 8, 71; July, Edit. 18L, 35, 71L, 72R; Adv. 8; Aug., Adv. 8, 81; Sept., Edit. 24; Adv. 16; Oct., Edit. 47, 48, 49, 50, 51, 52, 53, 54, 63, 65, 69, 71, 73, 74R; Adv. 70; Nov., Edit. 29R, 31, 46, 57R, 92R
 electrodes and welding rods, Jan., Edit. 72R; Feb., Adv. 13; March, Edit. 104R; Oct., Adv. 76; Nov., Edit. 62
 flame cutting, April, Edit. 29R, 30L; Oct., Adv. 74L
 general, Jan., Edit. 33R, 56R; May, Adv. 8
 machines and processes, Jan., Adv. 84; Sept., Edit. 27; Oct., Adv. 66, 75; Nov., Adv. 12, 21; Dec., Edit. 40, 62R, 63L; Adv. 8, 76
 torch cutting, Oct., Edit. 55, 56, 57; Adv. 64
 flame cutting, Adv. 74L
Wheels, April, Edit. 76R
- Principles:**
 Centrifugal, Feb., Edit. 26R; April, Edit. 25, 26, 27; June, Edit. 28, 29R
 Hydraulic, Feb., Edit. 27, 28, 29, 30; May, Edit. 29L; June, Edit. 27; July, Edit. 26
 Magnetic, Aug., Edit. 38; Sept., Edit. 25; Nov., Edit. 59L
 Vacuum, July, Edit. 26R, 27L; Nov., Edit. 30R, 44R
- Production:**
 Hardening, with the torch, Oct., Edit. 57
 Securing precise, July, Edit. 21, 22, 23, 24, 50R
 Stainless steels, advances in, March, Edit. 37, 38
 Torch cutting, place of, Oct., Edit. 56, 57
- Sales and Sales Department:**
 Appearance, improving, Nov., Edit. 40, 41, 42
 Appearance, creating acceptance with, Aug., Edit. 21, 22, 23
 Finishes, importance of, April, Edit. 44
 Increasing, through redesign, Jan., Edit. 19, 20, 21, 22
 Mechanisms, explaining, June, Edit. 20R
- Standardization:**
 Design details, Oct., Edit. 29, 30, 31
 Preferred numbers system, Aug., Edit. 18L
 Specifications, on drawings, Nov., Edit. 57
 Welding symbols, Oct., Edit. 54L

